FEDERALLY ENDANGERED

Sperm Whale

(Physeter macrocephalus)

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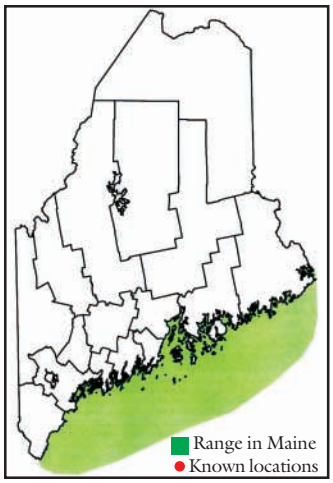
Description

The sperm whale was immortalized in Herman Melville's epic novel *Moby Dick*. This distinctive cetacean is the largest of the toothed whales. It is identified by its large, blunt, barrel-shaped head and narrow lower jaw containing 40-50 conical teeth. The teeth fit into sockets in the upper jaw. The head comprises about a third of total body length for adult males and a fourth for adult females. A single blowhole is located on the left front end of the head. The spout projects forward at an angle unlike that of any other whale. Eyes are located above and behind the edge of the mouth. There are several short grooves on the throat. The dorsal (upper) fin is thick and has a low profile, forming a compressed hump. Additional humps extend along the spine to the tail flukes. The large and triangular flukes are deeply notched. The small flippers are located a short distance behind and below the eyes.

Overall color is usually brown or slate-gray, with patches of white around the corners of the mouth and vent. The skin on the back appears wrinkled. The dorsal and ventral (lower) surfaces of both the flippers and flukes are the same slate gray or brown color as the rest of the body.



Adult males are typically larger than females and reach 49-59 feet in length and weigh up to 35-45 tons. Females grow to about 36 feet and a maximum weight of 13-14 tons.

Range and Habitat

Sperm whales are found in all of the world's oceans, except in the arctic. In the North Atlantic, they are found from Nova Scotia to the Gulf of Mexico. They prefer deep waters and generally stay along the edge of the continental shelf in water 3,000 to 6,000 feet deep. They are rarely observed in the Gulf of Maine. Males travel either alone or in groups, and are found in higher latitudes during the summer than in winter. Only mature males are found at breeding areas near the Equator. Females, calves, and juveniles remain in the warmer tropical waters of the Atlantic year-round.

Life History and Ecology

Sperm whales feed primarily on squid (especially giant squid), although octopi, sharks, skates, and other fish are also taken. Their search for squid accounts for much of their biology, behavior, and annual and seasonal movements. Each day, adult males eat about 3.5 percent of their body weight in squid. Many animals have scars from encounters with giant squid. Sperm whales feed primarily in areas of upwelling where food is plentiful, such as along the edges of the continental shelf, and locate their prey by using sonar. They dive to depths of 3,000 feet and can remain underwater from 20 minutes to over an hour. Their heads contain a large reservoir (3-4 tons) of waxy liquid called spermaceti that may help regulate their buoyancy.

Sperm whales are social animals and may occur in groups of 1000 or more individuals. Males form

harems during the breeding season. Mating occurs in the Northern Hemisphere from January to July, and peaks from March through May. The gestation period is the longest of any whale and lasts 16-17 months. In the Atlantic, calving occurs from May to November near the Azores. The calf receives milk from its mother for about 12 months, and weaning occurs when the calf measures about 21 feet. Females do not become pregnant for at least nine months after weaning; thus calving rate is only about once every four years. Sperm whales may live to be 50 years of age.

Threats

For nearly two centuries, the sperm whale was the staple of the New England whaling industry. During this time over one million were killed, severely reducing populations. They were hunted for their spermaceti, ambergris (a waxy substance in their digestive tracts), and oil. Spermaceti was used to make lubricant for machinery, ointments, and smokeless candles. The highly valuable ambergris was used in perfume. Oil was once used as fuel for lamps, lubricant, and base for skin creams and cosmetics.

Sperm whales are rarely found inshore and thus are rarely entangled in fishing gear. However, in 1994, a sperm whale was successfully disentangled from a mesh gillnet in Birch Harbor, Maine. These whales may be threatened by ocean pollution and ingesting plastics.

Conservation and Management

Current estimates of the sperm whale population in the Atlantic are between 20,000-100,000 individuals; population trends are unknown. The sperm whale is protected by the federal Endangered Species Act and Marine Mammal Protection Act. The Maine Department of Marine Resources has lead management authority for marine mammals, including the sperm whale.

Recommendations:

The Maine Department of Marine Resources recommends that National Marine Fisheries Service Guidelines for whale protection be employed. Regulations can be found at www.nero.nmfs.gov/whaletrp/. Current (2002) guidelines include the following:

✔ Dedicate state education and outreach efforts to fishermen.

✔ Close critical whale habitats to some types of fishing gear during times when whales are likely to be present.

✔ Prohibit some fishing practices (e.g., leaving inactive gear for more than 30 days) that increase risk of entanglement.

✔ Require some gear modifications in federal waters (e.g., knotless weak links in buoy lines for lobster traps and gillnets, no floating line at the surface) to reduce risk of entanglement.

✔ Utilize state and federal contacts for Whale Disentanglement Networks to locate entangled whales and remove gear. If you see an entangled whale, call the Northeast Disentanglement Network at 1-800-900-3622, the Coast Guard Station nearest you on 16 VHF Radio, the Maine Whale Take Reduction Coordinator, or the Maine Marine Patrol.

✔ Investigate and implement measures to reduce ship strikes of whales, including: 1) routing ships around observed whales, 2) restricting speed of vessels operating in whale habitats, 3) requiring mandatory shipping lanes when transiting through critical habitat areas, and 4) providing ship captains operating in critical habitats with the latest whale sighting data.

✔ Whale watchers must employ the following guidelines: 1) No vessel should approach closer than 300 yards. When whales are nearby, move at a constant, slow, "no wake" speed. 2) Do not engage props while whales are within 100 yards and do not chase whales. 3) When watching whales, do not box them in or cut off their path to prevent them from leaving. 4) Do not attempt to approach mothers with young calves. 5) Do not operate aircraft within 300 yards of a whale.

✔ Plan for protection of critical whale habitats in state and federal oil spill contingency planning.